ATTACHMENT J40

Example Completion of Schedule B-2

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The following example is provided as a demonstration of one method to complete Schedule B-2, *Utility Service Payment by the Government*. Any resemblance to conditions or costs at any U.S. Air Force Base is strictly coincidental. Similarly, any resemblance of the hypothetical bidder / offeror in this example to existing entities is strictly coincidental. **Offerors are advised not to place any importance on values used or assumptions made in this example.**

J40.1 Background of Example

The Air Force is considering privatizing the water utility system at one of its bases (Example AFB). It plans to complete the privatization in Year 2001. The Air Force has issued an RFP that, among other things, requires Offerors to complete Schedule B-2 presented in Section B of this RFP.

An interested party, Party X, reviews the RFP and decides to submit a proposal for the water system. In preparing its proposal, Party X conducts a system evaluation and determines the following:

1. The average monthly system operating cost needing to be recovered from the Air Force is $25,000. This amount includes recovery of operation, maintenance, repair, administration, and general costs. These costs are considered fixed in that they do not vary with the load on the system.

2. The value of the water utility system is $7,000,000.

3. The system has excess capacity that is potentially usable for customers other than the Air Force. The value of this excess capacity is 15 percent of the existing system value.

4. There are a number of physical and functional deficiencies in the system. To correct these deficiencies, two upgrades are required. The first will cost $1 million and take 8 months to complete and the second will cost $1.5 million and take 11.5 months to complete.

5. In addition to the remedies to system deficiencies, there will be a need for continuing renewals and replacements as other plant and equipment wears out with time. Party X prepares a 50-year schedule for renewals and replacements beyond those needed to remedy system deficiencies in accordance with Section L.9.6 of the RFP. The schedule includes no costs in some years and substantial costs in other years. Party X also projects the value of the utility system at the end of 50 years of ownership and operation.

6. Beyond correction of physical and functional deficiencies and normal renewals and replacements, no other improvements of the system are anticipated.

7. The system is in good enough condition that purchase costs can be amortized over 15 years. The risk associated with this investment requires a return of 3.0 percentage points above the interest rate on 30-year U.S. Treasury Bonds.

8. Costs associated with remedies of system deficiencies can be amortized over 25 years. The risk associated with this investment requires a return of 3.15 percentage points above the interest rate on 30-year U.S. Treasury Bonds.

9. The desired service response times are within Party X's standard operating procedures.

In developing these factors, Party X has included all required margins and returns.

In this example, it is assumed that the interest rate on 30-year U.S. Treasury Bonds in effect at the time of award will be 6.0 percent.

J40.2 Schedule B-2 Calculations

This section describes calculations that Party X could make in completing Schedule B-2. Although this would be one reasonable way to complete the schedule, other logical approaches could be taken.

SCHEDULE B-2
Utility Service Payment by the Government

_____ **(Installation Name)**

CLIN	Utility System			
_____	_____			
Sub-CLINs	**SUPPLIES/SERVICES**	**UNIT**	**MONTHLY SERVICE CHARGE**	**TOTAL CONTRACT AMOUNT**
AA	Monthly Credit as Payment for Purchase Price. Dollar amount shown shall include all applicable Taxes (see B.5.2.1, *Monthly Credit as Payment for Purchase Price*). $___7,000,000___ amortized over the first _180_ months of service at an interest rate that is (specify either of the following) _3.0_ percentage points above ~~or _____ percentage points below~~ the annual interest rate on U.S. Treasury Bonds in effect at the time of award.[a,b,c]	MO	$ (70,999)_	$(12,779,820)
AB	Fixed Monthly Charge (see B.5.2.2, *Service Charges)* The Contractor shall provide utility service in accordance with Section C, *Descriptions, Specifications, and Work Statement*.[d,e]	MO	$ __80,839__	$_48,503,314_
AC	Monthly Credit to the Government for Delayed Response Times When Servicing the Utility System. (See B.5.2.3, *Monthly Credit to the government*).[f] $_____1,000_____/hour			

[a] The Purchase Price (Sub-CLIN AA), interest rate, and amortization period are proposed by the Offeror.

[b] The interest rate on U.S. Treasury Bonds (30-years) is as established in the most recent 30-year bond issue prior to the date of award, and published in the Federal Register. (http://www.federalreserve.gov/releases/H15/update/)

[c] The total contract amount is calculated by multiplying the monthly service charge by the number of months over which the purchase price is amortized.

[d] The Offeror should enter the Fixed Monthly Charge, as computed in Schedule L-1. Additions to the Fixed Monthly Charge will be handled in accordance with Section H.10 and Schedule L-3, but should not be included in the price offered for Sub-CLIN AB.

[e] The total contract amount is calculated by multiplying the monthly service charge by 600.

[f] For proposal purposes the Offeror shall propose only a dollar per hour credit to the Government. During contract performance the hours per month will be determined for each month of service and the total monthly credit will be calculated and credited against the monthly invoice.

J-40.2.1 Sub-CLIN AA Calculation

Party X proposes a purchase price of $7 million (from J40.1, item 2), with payment of this purchase price over 15 years (180 months) at an annual interest rate equal to the interest rate on U.S. Treasury Bonds plus 3.0 percent (from J40.1, item 7). With 30-year U.S. Treasury Bonds carrying an interest rate of 6.0 percent, the total annual interest rate used to calculate the amortization of the purchase price would be 9.0 percent. As implied in Schedule B-2, the monthly interest rate used to calculate the monthly amortization payment is the annual interest rate divided by 12. In this example, the monthly interest rate is 0.75 percent (i.e., 9 percent / 12 months). Accordingly, the monthly credit as payment is $70,999. Credit over the life of the contract would be $12,779,820 ($70,999 / month x 180 months).

J-40.2.2 Sub-CLIN AB Calculation

Use Schedule L-1, *Calculation of Fixed Monthly Charge,* to calculate the Fixed Monthly Charge. The numbers entered in Sub-CLIN AB come from the last line in Schedule L-1.

Schedule L-1, Line 1 – Operations and Maintenance (O&M): The proposed monthly rate for operating the system (operation, maintenance, repair, administration, and general costs) is $25,000 per month (from J40.1, item 1), which is $15,000,000 ($25,000 x 600 months) over the 50-year life of the contract.

Schedule L-1, Line 2 –Renewals & Replacements (R&R): In order to calculate this Monthly Charge, Party X considered its projected schedule of renewal and replacement expenditures (beyond those made to remedy system deficiencies), as outlined in Schedule L-2, and the system's residual value at the end of 50 years (from J40.1, item 5). As discussed in more detail below, Party X calculated the present value (PV) of the projected renewal and replacement cash flow less a credit for residual system value. In making this present value calculation, Party X used its long-term cost of capital at the time it submitted its proposal (i.e., 9.15 percent per year; 0.7625 percent per month). Party X then amortized the present value amount over 600 months (50 years) at its monthly interest rate to obtain a Monthly Charge of $55,839. This is multiplied by the number of months in the contract for the Total Contract Amount ($55,839 x 600 = $33,503,314). *[This approach is one of several possibilities potential bidders could use.]*

Schedule L-1 - Calculation of Fixed Monthly Charge

Component	Monthly Charge	Total Contract Amount
1. Operations and Maintenance (O&M)	25,000	15,000,000
2. Renewals & Replacements (R&R) (use Schedule L-2 to compute)	55,839	33,503,314
Total Fixed Monthly Charge (to be entered in Sub-CLIN AB)	**80,839**	**48,503,314**

SCHEDULE L-2
RENEWALS AND REPLACEMENTS SCHEDULE
50-Year Schedule

Year	R&R Price ($1,000)	Description of Renewal or Replacement
2001	-----	None
2002	-----	None
2003	-----	None
2004	-----	None
2005	-----	None
2006	-----	None
2007	-----	None
2008	-----	None
2009	-----	None
2010	13,000	Replace system cast iron pipe with PVC - Expected life: 50 years; Replace transite - Expected life: 50 years
2011	-----	None
2012	-----	None
2013	-----	None
2014	-----	None
2015	4,667	Replace fire hydrants - Expected life: 50 years
2016	-----	None
2017	2,400	Replace underground storage tanks - Expected life: 75 years
2018	-----	None
2019	-----	None
2020	-----	None
2021	-----	None
2022	-----	None
2023	-----	None
2024	-----	None
2025	-----	None
2026	-----	None
2027	-----	None
2028	-----	None
2029	-----	None
2030	-----	None
2031	31	Replace Well A - Expected life: 75 years
2032	-----	None
2033	17	Replace Well B - Expected life: 75 years
2034	-----	None
2035	733	Replace galvanized iron pipe with PVC - Expected life: 50 years

Year	R&R Price ($1,000)	Description of Renewal or Replacement
2036	-----	None
2037	-----	None
2038	-----	None
2039	11	Replace Well C - Expected life: 75 years
2040	3,267	Replace Section 100 and 200 Pipe - Expected life: 50 years
2041	-----	None
2042	16	Replace Well D - Expected life: 75 years
2043	-----	None
2044	-----	None
2045	467	Replace ductile iron pipe - Expected life: 75 years
2046	-----	None
2047	33	Replace Well E - Expected life: 75 years
2048	15	Replace Well F - Expected life: 75 years
2049	-----	None
2050	-----	None

A summary of the cash flow, present value calculations, and residual value calculation[1] are shown in Table J40-1.

The Net Present Value (NPV) of Renewal and Replacements was calculated by subtracting the PV of the total Residual Value in Year 50 from the PV of the R&R cash flow:

NPV of R&Rs = PV of R&R Price - PV of total Residual Value in Year 50 =
= 7,359.5 - 113.2 = 7,246.3

The Monthly Charge for Renewal and Replacements was then calculated by amortizing the Net Present Value (NPV) of Renewal and Replacements ($7,246.3) over the length of the contract at Party X's long-term interest rate. In this example, with a contract period of 600 months and a long-term annual interest rate of 9.15 percent (i.e., 0.7625 percent per month), a monthly payment of $55,839 will fund all Renewal and Replacements and leave a residual value of approximately $9,012,900 in Year 50. It is implicitly assumed that the residual value will be collected either through charges in a subsequent contract or through a contract termination payment.

[1] Residual value calculations assume straight-line depreciation and no salvage values for all R&R investments. The equation used to calculate the residual values in Year 50 was:

Residual Value in Year 50 = R&R Price * (Part's Remaining Life in Yr 50 / Part's Expected Life)

Table J40-1 - Calculation of "Renewals and Replacements" Value for Schedule L-1 (Dollar Amounts in Thousands ($1,000))

Year	Description of Renewal or Replacement	R&R Price	Present Value of R&R Price	Equation for Residual Value	Residual Value in Year 50
2010	Replace system cast iron pipe with PVC; Replace transite	13,000	5,416.3	13,000 * (10 / 50)	2,600.0
2015	Replace fire hydrants	4,667	1,255.1	4,667 * (15 / 50)	1,400.1
2017	Replace underground storage tanks	2,400	541.8	2,400 * (42 / 75)	1,344.0
2031	Replace Well A	31	2.1	31 * (56 / 75)	23.1
2033	Replace Well B	17	0.9	17 * (58 / 75)	13.1
2035	Replace galvanized iron pipe with PVC	733	34.2	733 * (35 / 50)	513.1
2039	Replace Well C	11	0.4	11 * (64 / 75)	9.4
2040	Replace Section 100 and 200 Pipe	3,267	98.4	3,267 * (40 / 50)	2,613.6
2042	Replace Well D	16	0.4	16 * (67 / 75)	14.3
2045	Replace ductile iron pipe	467	9.1	467 * (70 / 75)	435.9
2047	Replace Well E	33	0.5	33 * (72 / 75)	31.7
2048	Replace Well F	15	0.2	15 * (73 / 75)	14.6
Totals			**7,359.5***	------	9,012.9*
Present Value of Residual Value in Year 50			------	------	**113.2**

*Values may not add precisely to the total shown due to rounding.

J-40.2.3 Sub-CLIN AC Calculation

The Offeror determines that managing the utility system to meet the response times of the contract is achievable (from J40.1, item 9) and proposes to credit the government $1,000 per hour for exceeding the response times.

J40.3 Example Schedule L-3 Calculations

Schedule L-3, Line 1 – Initial Capital Upgrades (from J40.1, item 4) - Party X proposes a Monthly Charge of $8,495 for completing upgrade Project 1. This was calculated by amortizing $1.0 million over 25 years (300 months) at a monthly rate of 0.7625 (annual interest rate of 9.15 percent—6.0 percent plus 3.15 percent—divided by 12). If and when Project 1 is completed (for this example it is assumed the Project will be completed in month 8 as proposed), the Monthly Charge for the project ($8,495) will be added to the Fixed Monthly Charge for the number of months over which the project will be amortized (300). These numbers are **not** entered anywhere in Schedule B-2. Similarly, the Monthly Charge for upgrade Project 2 ($12,742) is calculated by amortizing $1.5 million over 25 years (300 months) at a monthly rate of 0.7625. If and when Project 2 is completed (assume month 12, as proposed), the Monthly Charge for that project will be added to the Fixed Monthly Charge for the number of months over which that Project will be amortized (300). As with Project 1, these numbers are **not** entered anywhere in Schedule B-2.

Schedule L-3, Line 2 – Recoverable Portion of the Purchase Price (from J40.1, item 3) - This calculation is be based on an allocation of 85 percent of the purchase price to the Air Force and 15 percent of the purchase price to uses other than for the Air Force. In this example, the

amortization period and interest rate proposed are the same as for the payment by Party X to the Air Force for the utility system. Accordingly, Party X proposes to charge the Air Force 85 percent of the purchase payments that it is making to the Air Force. As with the Initial Capital Upgrades, this number is not entered anywhere in Schedule B-2.

Schedule L-3 - Additions to the Fixed Monthly Charge

Component Name	Component Cost	Interest Rate	First Full Month Project Will Be in Service	# of Months to Amortize Component	**Monthly Charge**
1. Initial Capital Upgrades					
Project 1	1,000,000	9.15	9	300	8,495
Project 2	1,500,000	9.15	13	300	12,742
2. Recoverable Portion of Purchase Price	5,950,000	9.00	NA	180	60,349

J40.4 Calculation of Monthly Payments

The monthly payment (i.e., what the utility service provider gets paid) for each month of the contract period is listed in the last (i.e., seventh) column of Table J40-2. It is the sum of columns 2 through 6 (the fixed and variable portions of the Monthly Service Charge). Initially, this would be $70,189. It would increase to $78,684 in Month 9, the first full month that upgrade Project 1 will be in service, then to $91,426 in month 13, the first full month that upgrade Project 2 will be in service. In month 181, after the purchase price of the utility system is fully amortized, the monthly payment will increase to $102,076. Then in Months 309 and 313, when upgrade Projects 1 and 2 are fully amortized, the monthly payment will fall to $93,581 and $80,839, respectively. It will remain at $80,839 for the remainder of the contract period.

Table J40-2 - Calculation of the Monthly Payment for Each Month of the Contract Period

(1)	(2)	(3)	Additions to the Fixed Monthly Charge			(7)
Months of Contract	Credit for Purchase Price (Sub-CLIN AA)	Fixed Portion of Monthly Service Charge (Sub-CLIN AB)	(4) Project 1	(5) Project 2	(6) Recoverable Portion of Purchase Price	Monthly Payment to Contractor
1-8	-70,999	80,839	0	0	60,349	70,189
9-12	-70,999	80,839	8,495	0	60,349	78,684
13-180	-70,999	80,839	8,495	12,742	60,349	91,426
181-308	0	80,839	8,495	12,742	0	102,076
309-312	0	80,839	0	12,742	0	93,581
313-600	0	80,839	0	0	0	80,839